



1
00:00:05,990 --> 00:00:04,789
25 status check

2
00:00:08,629 --> 00:00:06,000
go alice

3
00:00:13,190 --> 00:00:08,639
go center go 0a6

4
00:00:13,200 --> 00:00:17,590
t-minus 15 seconds

5
00:00:19,990 --> 00:00:19,029
t-minus 10

6
00:00:20,870 --> 00:00:20,000
9

7
00:00:21,910 --> 00:00:20,880
8

8
00:00:22,870 --> 00:00:21,920
7

9
00:00:23,910 --> 00:00:22,880
6

10
00:00:24,950 --> 00:00:23,920
5

11
00:00:26,070 --> 00:00:24,960
4

12
00:00:27,189 --> 00:00:26,080
3

13
00:00:28,070 --> 00:00:27,199

2

14

00:00:32,150 --> 00:00:28,080

1

15

00:00:34,870 --> 00:00:32,160

ignition and liftoff of the atlas v

16

00:00:35,990 --> 00:00:34,880

rocket with sickness with supplies for

17

00:00:47,750 --> 00:00:36,000

the crew

18

00:00:47,760 --> 00:01:03,830

is

19

00:01:03,840 --> 00:01:38,950

foreign

20

00:01:38,960 --> 00:02:02,870

some minor exploration requests

21

00:02:05,749 --> 00:02:04,870

max q all your heads continue to look

22

00:02:07,830 --> 00:02:05,759

good

23

00:02:15,030 --> 00:02:07,840

3180 is performing well pump speeds and

24

00:02:19,670 --> 00:02:16,710

booster has throttled back right on

25

00:02:23,510 --> 00:02:19,680

schedule engine response looks good

26
00:02:26,949 --> 00:02:23,520
current altitude is 12 miles downrange

27
00:02:29,670 --> 00:02:26,959
distance 7 miles current velocity 2057

28
00:02:31,430 --> 00:02:29,680
miles per hour

29
00:02:34,309 --> 00:02:31,440
range track looks good controlling right

30
00:02:50,309 --> 00:02:37,110
booster is now flying alpha's bias

31
00:02:53,350 --> 00:02:52,470
vehicle is now one half its lift off

32
00:03:00,630 --> 00:02:53,360
weight

33
00:03:11,830 --> 00:03:03,430
closed loop steering has been enabled

34
00:03:15,990 --> 00:03:14,309
rcs pyro valve has been fired systems

35
00:03:21,030 --> 00:03:16,000
now pressurizing the flight levels

36
00:03:27,149 --> 00:03:23,990
current altitude is 31 miles downrange

37
00:03:41,350 --> 00:03:27,159
distance 46 miles current velocity 4

38
00:03:50,869 --> 00:03:43,350

and the booster has begun to throttle to

39

00:03:50,879 --> 00:04:04,149

signatures look good

40

00:04:08,949 --> 00:04:06,149

solid data coming back vehicle is now

41

00:04:12,390 --> 00:04:08,959

one-quarter weight at liftoff coming up

42

00:04:14,390 --> 00:04:12,400

on boost space cooldown momentarily

43

00:04:17,349 --> 00:04:14,400

solid data coming back here to the cape

44

00:04:38,070 --> 00:04:17,359

from uh our telford telemetry station

45

00:04:47,110 --> 00:04:39,909

new space chill down is complete and we

46

00:04:52,790 --> 00:04:50,550

we have stage separation we have

47

00:04:56,790 --> 00:04:52,800

box and fuel pre-start gn2 purge farming

48

00:04:59,350 --> 00:04:56,800

the rcs system is underway

49

00:05:03,510 --> 00:04:59,360

and we have ignition and full thrust on

50

00:05:08,550 --> 00:05:06,950

coming up on payload jettison

51
00:05:13,590 --> 00:05:08,560
and we have indication of payload fern

52
00:05:17,510 --> 00:05:15,270
centaur closed loop stirring has been

53
00:05:38,230 --> 00:05:17,520
enabled

54
00:05:43,189 --> 00:05:39,830
currently centaurs flying an altitude of

55
00:05:46,230 --> 00:05:43,199
121 miles downrange distance is 338

56
00:05:47,510 --> 00:05:46,240
miles current velocity is 9 620 miles

57
00:05:49,909 --> 00:05:47,520
per hour

58
00:05:58,790 --> 00:05:49,919
range track shows centaur making good

59
00:06:03,189 --> 00:06:01,430
and we're seeing our normal rcs

60
00:06:04,710 --> 00:06:03,199
control firings

61
00:06:06,790 --> 00:06:04,720
line temperatures are warming towards

62
00:06:40,070 --> 00:06:06,800
bottle temperature

63
00:06:44,309 --> 00:06:42,070

and centaur has

64

00:07:07,430 --> 00:06:44,319

begun its dog like maneuver signatures

65

00:07:18,629 --> 00:07:10,469

and centaur mixture issues coming

66

00:07:18,639 --> 00:07:30,230

coming up on the format change

67

00:07:40,150 --> 00:07:31,749

it looks like we have had the format

68

00:07:44,469 --> 00:07:41,830

still seeing normal thermal conditioning

69

00:07:45,909 --> 00:07:44,479

firings on the rcs

70

00:07:54,230 --> 00:07:45,919

line temperatures continue to warm

71

00:08:03,270 --> 00:07:56,550

this entire tank pressures are stable

72

00:08:07,189 --> 00:08:05,990

centaur is now controlling uh near zero

73

00:08:08,710 --> 00:08:07,199

body rates

74

00:08:10,869 --> 00:08:08,720

continues to make good progress right

75

00:08:13,830 --> 00:08:10,879

down the middle of the range corridor

76

00:08:17,110 --> 00:08:13,840

current altitude is 190 miles current

77

00:08:30,150 --> 00:08:17,120

downrange distance is 744 miles

78

00:08:34,389 --> 00:08:31,990

and centaur is now requesting an

79

00:08:36,949 --> 00:08:34,399

oxidizer rich correction

80

00:08:43,110 --> 00:08:36,959

engine performance is commensurate with

81

00:08:43,120 --> 00:08:49,110

the vehicle baggage continue look good

82

00:09:02,310 --> 00:08:52,070

battery voltages are stable

83

00:09:14,150 --> 00:09:04,230

this first burn of centaur is scheduled

84

00:09:25,110 --> 00:09:16,230

still live telemetry data coming from

85

00:09:27,430 --> 00:09:25,990

near

86

00:09:29,990 --> 00:09:27,440

nominal

87

00:09:31,829 --> 00:09:30,000

engine performance continues look good

88

00:09:36,870 --> 00:09:31,839

chamber pressures locksmith discharge

89

00:09:41,590 --> 00:09:38,470

about half a minute away we'll be going

90

00:09:49,110 --> 00:09:45,110

altitude 208 miles downrange distance is

91

00:10:20,710 --> 00:09:49,120

1002 miles current velocity 10 548 miles

92

00:10:25,910 --> 00:10:23,750

and center tank pressures and batteries

93

00:10:27,110 --> 00:10:25,920

all look stable at this point

94

00:10:40,150 --> 00:10:27,120

right here it's controlling down the

95

00:10:45,110 --> 00:10:42,230

and center has gone to antenna select

96

00:10:45,120 --> 00:10:49,350

data quality continues to look very good

97

00:11:11,750 --> 00:10:51,750

rl10 operation is nominal for the

98

00:11:15,990 --> 00:11:14,069

rsc line temperatures continue warming

99

00:11:18,470 --> 00:11:16,000

towards bottle temperatures

100

00:11:21,110 --> 00:11:18,480

signatures look good

101
00:11:23,350 --> 00:11:21,120
centaur pu is controlling it

102
00:11:31,030 --> 00:11:23,360
nominal mr

103
00:11:35,790 --> 00:11:33,910
current altitude is 212 miles downrange

104
00:11:39,069 --> 00:11:35,800
distance is

105
00:12:19,350 --> 00:11:39,079
1354 miles current velocity 11

106
00:12:22,949 --> 00:12:21,110
center portion of flight continues to

107
00:12:25,590 --> 00:12:22,959
look very good all systems are operating

108
00:12:28,150 --> 00:12:25,600
within expected vans for the

109
00:12:31,110 --> 00:12:28,160
conditions we are currently in

110
00:12:34,310 --> 00:12:31,120
current altitude is 208 miles downrange

111
00:12:35,949 --> 00:12:34,320
distance 1552

112
00:12:39,190 --> 00:12:35,959
current velocity 11

113
00:12:41,269 --> 00:12:39,200

797 miles per hour

114

00:12:43,269 --> 00:12:41,279

range track continues to show good

115

00:12:49,509 --> 00:12:43,279

progress downrange right down the middle

116

00:12:54,150 --> 00:12:51,829

12 minus 20 seconds into the flight

117

00:13:28,310 --> 00:12:54,160

centaur engine cutoff will come at 18

118

00:13:28,320 --> 00:13:33,110

launch plus 13 minutes

119

00:13:36,389 --> 00:13:34,790

centaur performance continues to look

120

00:13:38,870 --> 00:13:36,399

very good storage bottle pressures are

121

00:13:40,790 --> 00:13:38,880

stable tank pressures are as well

122

00:14:15,990 --> 00:13:40,800

batteries are

123

00:14:21,949 --> 00:14:17,910

centaur continues its flight at an

124

00:14:24,710 --> 00:14:21,959

altitude of 193 miles downrange distance

125

00:14:28,550 --> 00:14:24,720

1970 miles current velocity

126
00:14:30,710 --> 00:14:28,560
12 828 miles per hour

127
00:14:33,509 --> 00:14:30,720
range track continues to show good

128
00:15:27,430 --> 00:14:33,519
progress downrange

129
00:15:32,310 --> 00:15:29,189
and we're still seeing our thermal

130
00:15:35,350 --> 00:15:32,320
conditioning ferns on the rcs

131
00:15:37,829 --> 00:15:35,360
line temperatures are stable

132
00:15:40,310 --> 00:15:37,839
rl10 performance continues to look good

133
00:15:41,670 --> 00:15:40,320
chamber pressures ox pump discharge fuel

134
00:15:43,509 --> 00:15:41,680
venturi

135
00:15:58,069 --> 00:15:43,519
all with an expected range for the

136
00:15:58,079 --> 00:16:04,069
15 minutes 30 seconds into the flight

137
00:16:14,389 --> 00:16:06,629
centaur will cut off at 18 minutes 9

138
00:16:46,069 --> 00:16:16,790

and then cygnus will separate 20 minutes

139

00:16:46,079 --> 00:16:50,629

solid flight data

140

00:16:56,550 --> 00:16:54,790

56 miles downrange distance 2 659 miles

141

00:16:59,350 --> 00:16:56,560

current velocity 14

142

00:17:01,509 --> 00:16:59,360

605 miles per hour

143

00:17:10,949 --> 00:17:01,519

range track continues to look good

144

00:17:10,959 --> 00:17:30,070

solid flight data coming through tdrs

145

00:17:46,870 --> 00:17:31,669

one minute remaining in the powered

146

00:17:50,630 --> 00:17:48,470

about a minute remains in this first

147

00:17:51,590 --> 00:17:50,640

burn of centaur all systems continue to

148

00:17:54,390 --> 00:17:51,600

look good

149

00:17:56,789 --> 00:17:54,400

current altitude 158 miles downrange

150

00:18:09,909 --> 00:17:56,799

distance 2989

151
00:18:09,919 --> 00:18:32,070
30 seconds to center engine cut off

152
00:18:32,080 --> 00:19:17,350
40.

153
00:19:21,110 --> 00:19:19,669
and centaur continues to perform very

154
00:19:22,789 --> 00:19:21,120
well

155
00:19:25,430 --> 00:19:22,799
said mr is

156
00:19:27,190 --> 00:19:25,440
the nominal mixed ratio

157
00:19:31,510 --> 00:19:27,200
chamber pressures locks pump discharge

158
00:19:31,520 --> 00:19:38,630
body rates are controlling at zero

159
00:19:42,909 --> 00:19:41,350
current altitude is 150 miles downrange

160
00:19:47,350 --> 00:19:42,919
distance

161
00:19:53,350 --> 00:19:47,360
3643 miles current velocity 17 311 miles

162
00:19:58,070 --> 00:19:55,669
and we have mikko engine shutdown looks

163
00:20:00,150 --> 00:19:58,080

good we have 4s settling on

164

00:20:07,350 --> 00:20:00,160

this coast to spacecraft separation is

165

00:20:23,510 --> 00:20:09,270

centaur has begun to turn to separation

166

00:20:27,990 --> 00:20:25,669

centaur fuel tank has vented down and is

167

00:21:10,950 --> 00:20:28,000

currently stable we continue our turn to

168

00:21:14,950 --> 00:21:12,710

centaur is continuing its turn to

169

00:21:17,110 --> 00:21:14,960

separation attitude

170

00:21:49,990 --> 00:21:17,120

all other systems are operating as

171

00:22:24,149 --> 00:21:51,750

and centaur has completed the term

172

00:22:24,159 --> 00:22:31,510

and center fuel tank is venting down

173

00:22:31,520 --> 00:22:37,110

and it has completed the vent

174

00:22:37,120 --> 00:22:42,710

and we have spacecraft separation

175

00:22:46,710 --> 00:22:44,149

applause here in the mission director

